

REMARKS

Claims 1, 27, 29 and 31 have been amended, without prejudice or disclaimer. No new matter has been introduced. Twenty-five (25) claims are pending and remain for consideration. Favorable reconsideration of the pending claims is respectfully requested.

IN THE CLAIMS

35 U.S.C. § 132(a)

Applicants acknowledge the objection under 35 U.S.C. § 132(a), as set forth in the Official Letter, dated November 21, 2005, is withdrawn.

35 U.S.C. § 112

Applicants acknowledge the rejection of claims 1-18 and 27-33, under 35 U.S.C. § 112, first paragraph, as set forth in the Official Letter, dated November 21, 2005, is also withdrawn.

35 U.S.C. § 102

Applicants acknowledge the rejection under 35 U.S.C. § 102(b) of claims 1-7, 10, 15 and 17-18, as being anticipated by U.S. Patent No. 5,925,165, to Pflugl (hereinafter "Pflugl"), and claims 1-6 and 8, as being anticipated by U.S. Patent No. 3,552,949, to Boyle (hereinafter "Boyle"), is withdrawn.

Claims 1, 3-6, 8, 12-13, 15-17 and 27-33 are now rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,525,604, to Van Dornick (hereinafter "Van Dornick"). The rejection is respectfully traversed.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

The elements must be arranged as required by the Applicants' claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990).

Applicants respectfully submit that all of the claims in the present application are directed to a "glass-melting furnace," not a furnace for refining palletized metalliferous material, as taught by Van Dornick. Since Van Dornick discloses a furnace for refining palletized metalliferous material, not a glass-melting furnace, as set forth in the claims, Van Dornick fails to disclose the identical invention set forth in the claims.

The Examiner asserts that the furnace of Van Dornick is capable of melting glass, as if the recitation of a "*glass-melting furnace*" in the preamble of the claims should not be given patentable weight.

Applicants respectfully submit that preambles to claims have been held not to be limitations where the claims were drawn to a structure and a portion of the claim following the preamble was a self-contained description of a structure *not depending for completeness upon the introductory clause*, or where the claim was drawn to a product and the introductory clause merely recited a property inherent in an old composition *defined by the remaining part of the claim*. In these cases, *apart from the introductory clause*, the claim *completely defined the subject matter*, and the preamble merely stated *a purpose or intended use* of the subject matter. However, in other cited cases, where the preamble was expressly or by necessary implication given effect of a limitation, the introductory phrase *was deemed essential to point out the invention*. In these cases, the preamble was considered *necessary to give life, meaning, and vitality* to the claims. Usually, there was inherent in the article specified in the preamble *a problem* that was presented to prior artisans *and a solution* of which was not conceived by or known to them. The nature of the problem characterized elements comprising *the article* in the introductory clause, *and elements recited in the body* of the claim following the introductory clause, so as to distinguish the claim over prior art. *Kropa v. Robie*, 88 USPQ 478-479 (CCPA).

In *Kropa*, the patentee appealed a rejection of claims reciting "an abrasive article" in the preamble. Contrary to the Examiner's assertion, the court in *Kropa* held that the recitation of "an abrasive article" in the preamble was *essential to point out the claimed invention*, stating that the phrase *gave life and meaning to the claims*, for it was only by this phrase (i.e., "an abrasive article") that it could have been known that the subject matter defined by the claims was comprised as an abrasive article.

This holding supports the position that the recitation of "*glass-melting furnace*," as set forth in the preamble of the claims, *should be given patentable weight*. The preamble does not merely state a *purpose or intended use* of the subject matter in the body of the claims. Instead, it is necessary to *completely define the subject matter* of the invention over the prior art. Inherent in prior art glass-melting furnaces were problems for which no solution had been provided. In prior art glass-melting furnaces, the velocity of the gases was greatest above the unmelted glass forming materials, and thus enhanced the entrainment of these materials. This problem is solved by the claims, which recite an element (i.e., *a glass-melting furnace*) in the preamble and elements. This distinguishes the claims over prior art furnaces. The recitation of *a glass-melting furnace* in the preamble of the claims *is deemed essential to point out the invention* and is *necessary to give life, meaning, and vitality* to the claims. As a consequence, the recitation of "*a glass-melting furnace*" in the preamble of the claims *should be given patentable weight*.

In view of the foregoing remarks and arguments, the rejection of the claims under 35 U.S.C. § 102 is improper.

In addition, claims 1, 27, 29 and 31 have been amended to positively recite a charger supplying glass-forming material to the upstream end of the furnace and/or at least one burner supplying heat to the glass-forming material at the upstream end of the furnace. Though Applicants believe the claims as previously presented were distinguished over Van Dornick, the claims as amended clearly define over Van Dornick because Van Dornick is totally deficient any teaching of glass-forming

material. For at least this additional reason, claims 1, 27, 29 and 31 should be allowable over Van Dornick.

Claims 3-6, 8, 28, 30 and 32-33 depend from claims 1, 27, 29 and 31 and should be allowable for at least the same reasons as claims 1, 27, 29 and 31, as set forth above.

In addition, with regard to claim 33, there is recited a pressure differential between the first half of the furnace and the second half of the furnace, wherein pressure in the second half of the furnace is lower than pressure in the first half of the furnace. The Examiner asserts that a pressure differential in different parts of the furnace is a method and not a structural limitation. Applicants wish to respectfully point out that it has been held that there is *nothing inherently wrong with defining some part of an invention in functional terms*. A functional limitation *must be evaluated and considered* just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. See *In re Venezia*, 530 F.2d 956, 189 USPQ 149 (CCPA 1976), where it was held that limitations such as "members adapted to be positioned" *serve to precisely define structural attributes* of interrelated component parts of the claimed assembly; see also *MPEP* § 2173.05(g) 8th ed., rev. 1, February 2003. In view of these holdings, Applicants respectfully submit that the recitation of a particular function should be *evaluated and considered*. There is *nothing inherently wrong with defining* the first and second halves of the glass melting furnace in terms of a pressure differential therebetween, as set forth in claim 33. The limitation *must be evaluated and considered* just like any other limitation of the claim.

The Examiner has not recited any reference that discloses or teaches a pressure differential between the first half of the furnace and the second half of the furnace, wherein pressure in the second half of the furnace is lower than pressure in the first half of the furnace, as recited in claim 33. In the absence of such disclosure or teaching, claim 33 should be allowable in its own right.

35 U.S.C. § 103

Applicants acknowledge the rejection under 35 U.S.C. § 103 of claim 12 as being unpatentable over Pflugl, claims 8 and 16 as being unpatentable over Pflugl in view of U.S. Patent No. 4,481,024, to Bly (hereinafter "Bly"), claims 9, 11 and 14 as being unpatentable over Pflugl in view of U.S. Patent No. 6,519,973, to Hoke (hereinafter "Hoke"), and claim 13 as being unpatentable over Pflugl in view of Hoke and further in view of Bly, is withdrawn.

Claims 2, 7, 10-11 and 18 are now rejected under 35 U.S.C. § 103 as being unpatentable over Van Dornick in view of Pflugl. The rejection is respectfully traversed.

Claims 2, 7, 10-11 and 18 depend from claims 1 and 15 and should be allowable over Van Dornick for at least the reasons set forth above. Pflugl fails to cure the deficiencies in Van Dornick. Hence, these claims should be allowable over Van Dornick in view of Pflugl.

In addition, claims 7, 10-11 and 18 recite a plurality of, or at least two exhaust stacks, which when read in combination with claim 1 and 15, are positioned or located at the downstream end of the furnace.

When applying 35 U.S.C. § 103, the cited references must be considered as a whole, must suggest the desirability and thus the obviousness of making the combination, and must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention. *Hodosh v. Block Drug Co., Inc.*, 786 F.2d 1136, 1143 n.5, 229 USPQ 182 187 n.5 (Fed. Cir. 1986).

Van Dornick fails to disclose a plurality of, at least two exhaust stacks, as set forth in the claims, but instead discloses a single exhaust stack. Pflugl fails to disclose a plurality of, or at least two exhaust stacks, which are positioned or located at the downstream end of the furnace, as set forth in the claims. Instead, Pflugl discloses two exhaust stacks positioned at the upstream end of a furnace. There is no suggestion in Van Dornick that the stack at the downstream end could be a plurality of stacks, or in Pflugl that the stacks at the upstream end could be downstream. Hence, the cited

references do not suggest the desirability and thus the obviousness of making the combination. In the absence of such suggestion, the Examiner has failed to establish a prima facie case of obviousness. Accordingly, claims 7, 10-11 and 18 should be allowable over Van Dornick and Pflugl in their own right.

Lastly, claims 9 and 14, are rejected under 35 U.S.C. § 103 as being unpatentable over Van Dornick in view of U.S. Patent No. 6,519,973, to Hoke (hereinafter "Hoke"). The rejection is respectfully traversed.

Claim 14 recites a furnace comprising two sidewalls and two exhausts, wherein each exhaust is separated laterally from the sidewalls.

The Examiner admits that Van Dornick, as applied above against claim 12, does not disclose an exhaust that is located at a sidewall of the furnace. For this teaching, the Examiner relies on Hoke, asserting that Hoke discloses a glass melting furnace where exhausts are located at sidewalls of the furnace. However, claim 14 recites two exhausts, wherein each exhaust is separated laterally from the sidewalls. Hoke fails to disclose two exhausts, each separated laterally from the sidewalls, as set forth in claim 14. In the absence of such teaching, claim 14 should be allowable over Van Dornick and Hoke in its own right.

#### Conclusion

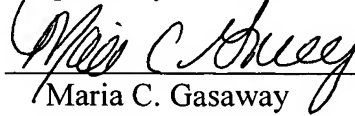
Applicants believe the claims are presently in condition for allowance and respectfully request that the Examiner either move the prosecution forward by either addressing Applicants' remarks and arguments and rejecting the new claims on prior art, or withdraw his rejection of the claims and pass the claims on for allowance.

#### Request for Telephone Interview

As a final matter, if the Examiner has any suggestions concerning different claim phraseology that, in the opinion of the Examiner, more accurately defines the present invention, prior to issuance of another Office Action, Applicants' attorney or

agent requests the courtesy of a telephone interview at the Examiner's earliest convenience to discuss the application. Applicants' attorney or agent may be contacted at (740) 321-7213.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Maria C. Gasaway", is written over a horizontal line.

Maria C. Gasaway

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